

## REMARKS/ARGUMENTS

Claims 1, 2, 4, 5, 9, 10, 19, 20, and 30-39 are pending in the application. The Applicants hereby request further examination and reconsideration of the application in view of these remarks.

### Rejections Under 35 U.S.C. 103

In paragraph 3, the Examiner rejected claims 1, 2, 4, 5, 30-34, 38, and 39 under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Borland et al. ("Borland") and further in view of Young, III ("Young").

In paragraph 4, the Examiner rejected claim 9, 10, 19, 20, and 35-37 under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Borland and further in view of Young and Tuoriniemi et al. ("Tuoriniemi").

### Claim 1

For the following reasons, the Applicant submits that claim 1 is allowable over Sato in view of Borland and further in view of Young.

Claim 1, as amended, recites "[a] cordless telephone, comprising: a remote handset; a base unit matched to said remote handset; an MPEG audio player integrated within at least one of said remote handset and said base unit; and a summer to digitally sum a digitally synthesized ring tone with an MPEG audio bit stream to allow a user of said cordless telephone to hear said cordless telephone ringing along with music."

The Examiner admitted that Sato fails to "disclose an MPEG audio player integrated within at least one of the remote handset and the base unit." (Office Action, page 3.) The Examiner asserted, however, that Borland teaches an MPEG audio player integrated within at least one of the remote handset and the base unit, and that one of ordinary skill in the art at the time the invention was made would be motivated to combine the teaching of Borland into the system of Sato in order to provide a high-quality audio signal. (Id.)

The Applicants respectfully disagree, because the Examiner's proposed motivation to combine Sato and Borland lacks merit. Sato fails to disclose, and the Examiner has failed to identify, any actual problems with the "quality" of audio produced by the handset of Sato that would support the Examiner's proposed modification. Rather, Sato discloses the use of digital audio that is transmitted to a handset and then converted to an analog signal for output to a speaker. (See Sato, paragraph 0020.) Borland teaches the use of MPEG audio compression to overcome a bandwidth bottleneck created by the public switched telephone network (PSTN). Because MPEG compression is a lossy compression algorithm, however, it reduces audio quality, rather than improving it. Thus, one of ordinary skill in the art at the time the invention was made would not have been motivated to combine the teaching of Borland into the system of Sato.

The Examiner further acknowledged that the combination of Sato and Borland fails to disclose "a summer adapted to digitally sum a digitally synthesized ring tone with an audio bit stream to allow a user of said cordless telephone to hear said cordless telephone ringing along with music." (Office Action, page 3.) The Examiner alleged, however, that Young teaches this limitation, as follows:

[S]ee column 3, lines 18-21, column 4, lines 27-34, see "the present invention would operate identically with digital or other type telephones," also see Abstract and column 2, lines 9-24, see "a user headset is connected to a mixer with audio input from a Music Source, a mic detecting

ambient noise, and a ring tone from the phone"), see column 4, lines 24-30, see "so they can hear the telephone rang while listen[ing] to music," also see column 5, lines 50-60, see "a cordless."

(Id. at page 3.) The Applicants again disagree.

The Applicants respectfully submit that the Examiner goes well beyond the teaching of Young, in asserting that Young teaches digitally summing a digital synthesized ring tone with an MP3 audio bit stream. The portions of Young cited by the Examiner simply do not support Examiner's assertion. Young, column 2, lines 9-24, states:

- (1) Bypass Mode (handset lifter down, mic position up or down). A Phone is used as a normal telephone that is answered with its handset, and a user headset is connected to a mixer with audio input from a Music Source, a mic detecting ambient noise, and the ring tone from the Phone.
- (2) Telephone Mode (handset lifter up, mic position down). The Phone is operated from the headset, the handset is disconnected, and the Music Source is paused.
- (3) Music Mode (Handset lifter up, mic position down). The headset is connected to the mixer with audio input from the Music Source, a mic detecting ambient noise, and the ring tone from the Phone. The Phone is disconnected from the phone line, but the Phone may be answered from the headset by entering the Telephone Mode.

(Young, column 2, lines 9-24.) Young, column 3, lines 18-21, states that "[p]hone 10 is a standard analog or digital telephone used access the public switch telephone network. A preferred phone would be headphone-compatible having earphone and microphone level adjustments and electrical compatibilities." (Id., column 3, lines 18-21.) Young, column 4, lines 24-30, states that "in addition, the mixer allows a user to set the music volume as desired, and to control the 'ringing' volume so they can still hear the telephone ring while listening to music. However, to answer the telephone, while operating in the Bypass Mode, the user must lift handset 12 from Phone 10 and operate Phone 10 as a standard telephone." (Id., column 4, lines 24-30.) Young, column 5, lines 30-32, states that "as will be appreciated, the preferred embodiment utilizes an analog phone, but the present invention would operate identically with digital or other type telephones . . . ." (Id., column 5, lines 30-32.) And Young, column 5, lines 50-60, states:

In another alternative embodiment, the handset unit 40 is a cordless arrangement using bi-directional infrared links. A base unit would have an infrared transmit/receive tower similar to those used by cordless stereo headphones. The tower would transmit the music/telephone audio signals (ring tone, ambient noise, music, phone audio, etc.) to the cordless headphone set 40. The tower would also receive infrared signals transmitted by the handset representing the audio signals from its microphone, and a coded signal that informs the base unit as to the position of the microphone, as is required to determine the operational Mode.

(Id., column 5, lines 50-60.)

The Applicants do not dispute that the apparatus described in Young (having either a corded or cordless headphone set) may operate with a digital-type telephone. The system of Young comprises a telephone 10, a control box 20, a music source 30, and a headset 40 (which may be corded or cordless). (See Young, column 2, lines 42-49; column 5, lines 50-60; and Figure 1.) Music source 30 and headset 40 are connected directly to control box 20. Only the control box 20 interfaces with telephone 10, through (i) the phone line 27, (ii) the handset lines 15 and 17, and (iii) a lifter signal line 19 that indicates to the control box 20 whether the handset is on-hook or off-hook, based on the operation of a mechanical microswitch for detecting the position of a manually operated handset lifter that is affixed to phone 10. (See id., column 3, lines 31-33, and Figure 1.) As such, the system of Young may operate equally well

(indeed, identically) with either an analog telephone or a digital telephone, because the manually operated handset lifter may be affixed as easily to an analog telephone as to a digital telephone, and because both analog and digital telephones have a phone line port and handset ports that may be connected to the control box.

The Applicants disagree, however, that these cited portions of Young teach a summer adapted to digitally sum a digitally synthesized ring tone with an audio bit stream. Young discloses an analog mixer that inputs an analog ring tone, not a digital synthesized ring tone, as recited by claim 1. The analog mixer receives its inputs from (i) a music source that produces an analog music signal, (ii) a microphone detecting ambient noise, and (iii) a ring signal from the phone line. (See Figs. 1 and 2 and column 4, lines 7-10, stating “A ring signal on the public switched telephone network directed to Phone 10 is detected by Control Box 20, passed through attenuator 24 to provide a Ring Volume, and input to mixer 22.”) All three signals that are input into mixer 22 are analog signals. Young provides no teaching or suggestion whatsoever that the signals input to mixer 22 may be digital signals, or that mixer 22 may be a digital mixer. As such, Young fails to teach or even suggest either digital summing or a digitally synthesized ring tone.

The Applicants further submit that the combination of Young with Sato is improper, because the system of Young is incompatible with the cordless telephone of Sato. If a prior art reference is cited that requires some modification in order to meet the claimed invention or requires some modification in order to be properly combined with another reference and such a modification destroys the purpose or function of the invention disclosed in the reference, then a person of ordinary skill in the art would not have found a reason to make the claimed modification. See, e.g., In re Gordon, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984). Here, the system of Young relies on a manually operated handset lifter 14 and a mechanical microswitch for detecting the position of the lifter, in order to determine whether the telephone handset 12 is on-hook or off-hook. The Applicants respectfully submit that the manually operated handset lifter and the mechanical microswitch of Young would fail to operate with the remote handset of the cordless telephone of Sato, because the physical location of the remote handset is not relevant to whether the handset is off-hook or on-hook. As such, one of ordinary skill in the art would not be motivated to combine the system of Young with the cordless telephone of Sato.

For all these reasons, the Applicants submit that claim 1 is allowable over Sato, Borland, and Young. For similar reasons, the Applicants submit that claims 9 and 19 are also allowable over the cited references.

Since claims 2, 4, 5, 10, 20, and 30-39 depend directly or indirectly from claim 1, 9, or 19, it is further submitted that those claims are also allowable over the cited references.

The Applicants therefore respectfully submit that the rejections of claims 1, 2, 4, 5, 9, 10, 19, 20, and 30-39 under Section 103 have been overcome.

### Claim 30

Claim 30 depends from claim 1 and recites the limitations that “the base unit is adapted (i) to receive from a telephone line a telephone audio signal representing a telephone conversation and (ii) to transmit the telephone audio signal to the remote handset; and the summer is further adapted to digitally sum the telephone audio signal representing the telephone conversation with the MPEG audio bit stream.”

The Examiner asserted, inter alia, that Young (at column 2, lines 9-24; column 3, lines 18-21; column 4, lines 27-34; column 5, lines 50-60, and the Abstract) teaches that the summer is further adapted to digitally sum the telephone audio signal representing the telephone conversation with the MPEG audio bit stream. (See Office Action, pages 4-5.) The Applicants respectfully disagree.

The Applicants respectfully submit that the cited portions of Young (quoted above) have no relevance whatsoever to summing a telephone audio signal representing the telephone conversation with an audio stream. Rather, Young teaches that the mixer receives audio input from (i) a music source, (ii) a microphone detecting ambient noise, and (iii) the ring tone from the phone. (See Young, column 2, lines 12-14 and 19-21.) Young further teaches that, in "Telephone Mode", "[t]he phone is operated from the handset, and the handset is disconnected, and the music source is paused." (Young, column 2, lines 15-17.) Young, however, fails to teach or even suggest that "the summer is further adapted to digitally sum the telephone audio signal representing [a] telephone conversation with the MPEG audio bit stream."

The Applicants therefore respectfully submit that the above discussion provides additional reasons for the assertions that (i) claim 30 is allowable over the cited references and (ii) for similar reasons, claim 35 is allowable over the cited references.

Since claims 31-34 and 36-39 depend directly or indirectly from claim 30 or 35, it is further submitted that the above discussion provides additional reasons for the assertion that those claims are also allowable over the cited references.

#### Claim 31

Claim 31 recites the limitations that (i) the telephone audio signal is monaural; (ii) the MPEG audio bit stream has a plurality of stereo channels; and (iii) the summer is adapted to digitally sum the monaural telephone audio signal into each of the plurality of stereo channels of the MPEG audio bit stream, such that a sense of balance in the user is improved.

The Examiner asserted, inter alia, that Young (at column 2, lines 9-24; column 3, lines 18-21; column 4, lines 27-34; column 5, lines 50-60; and the Abstract) teaches that said summer is further adapted to digitally sum the monaural telephone audio signal into each of the plurality of stereo channels of the MPEG audio bit stream. (See Office Action, page 5.) The Applicants respectfully disagree. The cited portions of Young teach or suggest nothing whatsoever regarding summing a monaural telephone audio signal into each of a plurality of stereo channels of an MPEG audio bit stream, such that a sense of balance in the user is improved.

The Applicants therefore respectfully submit that the above discussion provides additional reasons for the assertions that (i) claim 31 is allowable over the cited references and (ii) for similar reasons, claim 36 is allowable over the cited references.

#### Claim 32

Claim 32 recites the limitation that both the MPEG audio player and the summer are jointly implemented as a single digital signal processor adapted to digitally sum the digitally synthesized ring tone with the MPEG audio bit stream.

The Examiner asserted, inter alia, that Young (at column 2, lines 9-24; column 3, lines 18-21; column 4, lines 27-34; column 5, lines 50-60; and the Abstract) teaches that both said MPEG audio player and said summer are jointly implemented as a single digital signal processor adapted to digitally sum the digitally synthesized ring tone with the MPEG audio bit stream. (See Office Action, pages 5-6.) The Applicants respectfully disagree. The cited portions of Young teach or suggest nothing whatsoever regarding either a digital signal processor or the joint implementation of an MPEG audio player and a summer as a single digital signal processor.

The Applicants therefore respectfully submit that the above discussion provides additional reasons for the assertions that (i) claim 32 is allowable over the cited references and (ii) for similar reasons, claim 37 is allowable over the cited references.

Since claims 33-34 and 38-39 depend directly or indirectly from claim 32 or 37, it is further submitted the above discussion provides additional reasons for the assertion that those claims are also allowable over the cited references.

#### Claim 34

Claim 34 depends from claim 33 and additionally recites that "the cordless telephone further comprises: a digital-to-analog converter connected to said digital signal processor to receive the digital summed audio signal and to produce an analog audio signal suitable for outputting to the user."

The Examiner asserted, inter alia, that Young (column 2, lines 9-24; column 3, lines 18-21; column 4, lines 27-34; column 5, lines 50-60; and the Abstract) teaches the limitations of claim 34. The Applicants respectfully disagree. The Applicants respectfully submit that the cited portions of Young teach nothing whatsoever regarding a digital-to-analog converter.

The Applicants therefore respectfully submit that the above discussion provides additional reasons for the assertions that (i) claim 34 is allowable over the cited references and (ii) for similar reasons, claim 39 is allowable over the cited references.

#### Conclusion

For the reasons set forth above, the Applicants respectfully submit that the rejections of claims 1, 2, 4, 5, 9, 10, 19, 20, and 30-39 have been overcome.

In view of the above remarks, the Applicants believe that the pending claims are in condition for allowance. Therefore, the Applicants believe that the entire application is in condition for allowance, and early and favorable action is respectfully solicited.

#### Fees

During the pendency of this application, the Commissioner for Patents is hereby authorized to charge payment of any filing fees for presentation of extra claims under 37 CFR 1.16 and any patent application processing fees under 37 CFR 1.17 or credit any overpayment to Mendelsohn, Drucker, & Associates, P.C. Deposit Account No. 50-0782.

The Commissioner for Patents is hereby authorized to treat any concurrent or future reply, requiring a petition for extension of time under 37 CFR 1.136 for its timely submission, as incorporating a petition for extension of time for the appropriate length of time if not submitted with the reply.

Respectfully submitted,

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